

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of
Siemensmeyer, et al.
Serial 10/529,476
Parent Application: Serial No.
Filed:
For: BASF Aktiengesellschaft

DECLARATION UNDER 37 CFR 1.132

I, Karl Siemensmeyer, a citizen of the Federal Republic of Germany and residing at 1 Erich-Heckel-Strasse, 67227 Frankenthal, Germany, declare as follows:

I am a fully trained chemist, having studied at the University of Paderborn, Germany, from 1980 to 1989;

I was awarded my doctor's degree by said university in 1989;

I joined BASF AG of 67056 Ludwigshafen, Federal Republic of Germany, in 1989, and worked in the field of liquid crystalline polymers from 1989 to 1996;

since then I have been working in the field of, in particular ink jet technology until 2001;

since then I have been working in the field of dyeing auxiliaries.

I am well acquainted with technical English;

I am one of the inventors and well acquainted with the patent application Serial Number 10/529,476, and I am acquainted with the field to which the said application relates. I have performed the following experiments.

Example 1

The dispersing properties of the naphthalenesulfonic acid-formaldehyde condensation product having an average molecular weight of 12 000, (= dispersant 6), was determined by a grinding test.

500 g of Disperse Blue 359, 500 g of polyethylene glycol having an average molecular weight of 400 g/mol , 125 g of dispersant 6, 24 g of a 50 % by weight solution of glutaraldehyde, 32 g of a 47 % by weight solution of tetramethylolacetylenediurea and 2799 g of water are pasted up in a mill. Thereafter, the pH is adjusted to 8.5 with 20 g of tri-ethanolamine and subsequently the mixture is ground in a stirred media mill. The particle size following a defined energy input by the mill of 6000 kWh/t is determined. The results are as follows:

Dispersant 6		
kWh/t	x50 [μm]	x16 [μm]
6000	0.37	0.72

Here, x50 and x16 mean that respectively 50% and 16% of the particles have a size above the stated value.

After aging of the concentrate at 60 °C for 3 days, minimal particle growth was observed.

Example 2

From the concentrate of example 1 an ink was produced.

In a beaker, 112.6 g of the concentrate of example 1 was mixed with 48.0 g of glycerol, 24.0 g of polyethylene glycol (average molecular weight 600 g/mol), 0.8 g of heptamethyltrisiloxane allyl alkoxylate copolymer, 1.92 g benzisothiazolinone (10%w/w), 0.48 g of polyether modified siloxane, 0.2 g of an ethoxylated acetylenic-diol and 212.0 g of demineralized water. The ink that was obtained was printed by an EPSON 3000 Stylus Color Piezo head printer onto A3 paper. The prints obtained had excellent line crispness. There was no nozzle failure after 40 sheets of paper, nor after 5 m² of printing in sustained use. The flow properties of the

ink were excellent. After aging of the ink at 60 °C for 5 days, minimal separation of disperse dye from the dispersion and particle growth were observed. The surface tension of the ink was 29.05mN/m and the viscosity 3.42 mPas.

Ludwigshafen, 17 December 2007

A handwritten signature in black ink, appearing to read "U. Eimann". It is written in a cursive style with a prominent initial 'U' and 'E'.